

**ROCKY FLATS PLANT
EM RADIOLOGICAL GUIDELINES**

Manual No.: 3-21000-OPS-EMRG
Procedure No.: Table of Contents, Rev 2
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Effective Date: 02/11/93
Organization: Environmental Management

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EMRG 1.0	Organization and Responsibilities	0	12/06/91
EMRG 1.1	Gama Radiation Surveys	0	12/06/91
EMRG 1.2	Beta Radiation Surveys	0	12/06/91
DCN 93.01	Compliance to Health & Safety Practices Manual	0	01/14/93
EMRG 1.3	Posting of Radiation Protection Requirements	0	12/06/91
DCN 93.01	Compliance to Radiological Protection Program	0	01/14/93
EMRG 2.1	Personnel Contamination Monitoring	0	12/06/91
DCN 93.01	Compliance to Radiological Control Manual	0	01/14/93
EMRG 2.2	Possible Inhalation Exposure	0	12/06/91
DCN 93.01	Compliance to Radiological Protection Program	0	01/14/93
DCN 93.02	Compliance to Radiological Protection Program	0	01/14/93
DCN 93.03	Compliance to Radiological Protection Program	0	01/14/93
DCN 93.04	Compliance to Radiological Protection Program	0	01/14/93
DCN 93.05	Compliance to Radiological Protection Program	0	01/14/93
*DCN 93.06	Compliance to Radiological Protection Program	0	02/10/93
EMRG 2.3	Wounds and Skin Contamination	0	12/06/91
DCN 93.01	Table 1 replacement for Internal Dosimetry Evaluation	0	01/14/93
DCN 93.02	Compliance to Radiological Protection Program	0	01/14/93
EMRG 3.1	Performance of Surface Contamination Surveys	0	12/06/91
DCN 93.01	Correction to Reference WO-4034	0	01/14/93

**DOCUMENT CLASSIFICATION REVIEW WAIVER
PER R.B. HOFFMAN, CLASSIFICATION OFFICE
JUNE 11, 1991**

ADDITIONAL

A-SW-001381

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EMRG 3.2	Survey Requirements for Conditional and Unrestricted Use	0	12/06/91
EMRG 3.5	Handling of Contaminated Dosimetry/Security Badges	0	12/06/91
DCN 93.01	Word Correction	0	01/14/93
EMRG 6.1	Performance Test and Operational Checks for Ludlum Model 12-A, Model 12, and Model 31 Survey Instruments	0	12/06/91
EMRG 6.3	Performance Checking and Operation of the Eberline SAC-4 Alpha-Scintillation Smear Counting Instrumentation	0	12/06/91
EMRG 6.4	Performance Testing and Operation of the Eberline BC-4 Beta Smear Counting Instrumentation	0	12/06/91
DCN 93.01	Formula Clarification	0	01/14/93
EMRG 6.5	Use of the Bicron Frisk-Tech with the A-100 and B-50 Detectors	0	12/06/91
DCN 93.01	Equipment Calibration Clarification	0	01/14/93
EMRG 6.6	Use of the Bicron Fidler (Field Instrument for the Detection of Low-Energy Radiation)	0	12/06/91
DCN 93.01	FIDLER Surveys	0	01/15/93
EMRG 9.1	Respiratory Protection Requirements and Posting	0	12/06/91
DCN 93.01	Revisions to Radiation Protection Program	0	01/15/93
EMRG 10.1	Radiological Deficiency Reporting Program	0	12/06/91

ENVIRONMENTAL MANAGEMENT DOCUMENT CHANGE NOTICE (DCN)

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Title <u>EMRG 2.2 Possible Inhalation Exposure</u> <i>1/14/93</i>	Date <u>2-10-93</u> <i>12/15/92 off 1/14/93</i>	DCN Number <u>93.06 rgt</u>
Expires <u>12/31/92 2/10/94</u> <i>off 1/14/93 mab</i>	Procedure Revision Required <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>off 1/14/93</i>	
Scope Limitation <u>None</u>		

Item Number	Page	Step or Paragraph	Changes (Use DCN CONTINUATION SHEET for Additional Space)
1	9 of 10	5.9	Add Step 5.9, See Attached.
2	2 of 10	4.1	Replace w/the attached Section 4.1.
3	2 of 10	4.1.1	Replace w/the attached Section 4.1.1.
4	5 of 10	5.2 to 5.2.1	Replace entire section w/attached Section 5.2, 5.2.1, 5.2.1.1, 5.2.1.2, 5.2.1.3, 5.2.1.4, 5.2.1.5, 5.2.1.6, 5.2.1.7.
<i>off 1/14/93</i> 5	8 of 10	5.4	Replace Section 5.4, 5.4.1, 5.4.2 and all sub sections w/attached.
<i>off 1/14/93</i> 5.8	7 of 10	5.3	Delete Section 5.3 and all 5.3 subsections.
6	8 of 10	5.4, 5.4.1, 5.4.2	Replace these sections w/ attached sections 5.3, 5.3.1, 5.3.1.1, 5.3.1.2, 5.3.2, 5.3.2.1, 5.3.2.2, 5.3.2.3, 5.3.3, 5.3.4, 5.3.5
7	10 of 10	6.7 (new)	Add sect. 6.7 after sect. 6.6, as shown on attached.
8	5 of 10	new	Add "WARNING" before step 5.2, as shown on attachment <i>off 1/14/93</i>

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SUPERSEDED
DOCUMENT

Justification (Reason for Change - Provide Numbers To Reference Corresponding Items Above)

1 through #8:
Compliance / Revision to Radiological Protection Program.

DOCUMENT CLASSIFICATION REVIEW WAIVER
PER R.B. HOFFMAN, CLASSIFICATION OFFICE
JUNE 11, 1991

Concurrence	Organization	Req	Date	Concurrence	Organization	Req	Date
<i>[Signature]</i>	QAPM	X	2/3/93	<i>[Signature]</i>	User <i>mab</i>	X	
<i>[Signature]</i>	Rad Eng	X	1/14/93	<i>[Signature]</i>	EQS	X	1/14/93
<i>[Signature]</i>	ES & E (user)	X	1/5/93				
<i>[Signature]</i>	EDM	X	1/29/93				
Approval of Responsible Manager <i>[Signature]</i>		Date <u>1-12-93</u>		Is Posting Req'd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		If Yes, By What Date? <u>upon receipt</u>	
						Date Posted	

DCN Form 001

FEB 10 1993

Add Step 5.9

Packaging and labeling requirements for nasal smears being transported shall follow the requirements of the On-Site Transportation Manual (Ref. 6.7)

Section 4.1 and 4.1.1 shall be replaced with the following:

4.1 Any radiological event which meets the criteria specified in 4.1.1 requires action, as follows:

- * If the individual exceeds the action levels specified in 4.1.1, the HSS shall notify the SSO.
- * The SSO shall determine whether the potential intake is Level 1 or Level 2 in accordance with HSP 18.19 (Reference 6.7).
- * The SSO shall then notify the individual's manager and the EMRE.
- * If the potential intake meets Level 1 or Level 2 criteria, the SSO shall initiate a Radiological Deficiency Report (RDR) in accordance with EMRG 10.01 (Reference 6.4).

4.1.1 Criteria for Internal Dosimetry Evaluation

SITUATION	ACTION LEVEL
Nasal/Mouth Smear	Any detectable contamination
Facial Contamination	Any detectable contamination
Head and Neck Contamination	Any detectable contamination
² Hand/Forearm Contamination	≥ 5000 dpm
² Clothing Contamination	≥ 5000 dpm
³ Wounds	Any detectable removable Radiologically Controlled Area
Contamination Inside Respirator	Any detectable removable contamination
Airborne Contamination	≥ ¹ 40 DAC hours

¹After incorporating respiratory protection factor.

²Levels apply to exposure without wearing a respirator, or loose contamination on precautionary inner clothing.

³Skin breaks and/or acid burns are considered to be wounds.

The following WARNING is added immediately prior to Step 5.2:

WARNING

CARE MUST BE TAKEN NOT TO INJURE THE NASAL PASSAGE OR CAUSE BLEEDING WHILE COLLECTING NASAL SMEARS.

Section 5.2 is revised to read as follows:

5.2

Facial contamination should trigger nasal smears. Nasal smears with cotton-tipped swabs and nasal blows with facial tissue shall be collected as soon as possible following facial decontamination and prior to the individual showering. The HSS shall hand the swabs and tissue to the affected employee, who will collect the mucus samples. Care must be taken during this procedure that the samples do not come into contact with any other source of contamination.

Section 5.2.1 is revised to read as follows:

5.2.1

Procedure for obtaining a nasal smear:

5.2.1.1

Have the exposed individual carefully insert the cotton-tipped swab into the nostril and thoroughly wipe the nasal passages. Use a separate cotton-tipped swab for each nostril. Be careful not to cross-contaminate.

5.2.1.2

Place each swab in a separate Ziplock®-type bag and tape shut. Attach a CAUTION - RADIOACTIVE MATERIAL (CRM) label to each bag.

5.2.1.3

Smear the outside of the Ziplock®-type bags and verify that contamination is <20 dpm/100 cm² removable alpha or <200 dpm/100 cm² removable beta/gamma, as appropriate.

5.2.1.4

Document the smear results in the "Content Description" area the Radioactive On-Site Shipping Label (Attachment 2), (See Section 6.4).

5.2.1.5

Have the individual complete the tamper-indicating seal with the information requested. Include the building number on the "Date Collected" line.

5.2.1.6

Place the bagged nasal swabs from each individual into a larger Ziplock®-type bag and cover the opening of the outer bag with the tamper-indicating seal.

5.2.1.7

Prepare a Sample Chain of Custody Record (Form RF-47153) as shown in Attachment 9.1 for each shipment of nasal smears.

Section 5.4 is revised to read as follows:

5.3 Packaging and Labeling of Samples

5.3.1 For nasal smears with $\leq 5,000$ dpm/sample:

5.3.1.1 Place the bagged nasal smears into a Volrath® can or 1 gallon paint can.

5.3.1.2 Tape shut the Volrath® can or close the paint can lid, as appropriate.

5.3.2 For nasal smears with $> 5,000$ dpm/sample and $\leq 150,000$ dpm/sample:

5.3.2.1 Place the bagged nasal smears into a Volrath® can and tape the lid.

5.3.2.2 Attach a CAUTION - RADIOACTIVE MATERIAL - Isotope (CRM-Isotope) label to the can.

5.3.2.3 Place the Volrath® in a 1 gallon paint can and attach the lid.

5.3.3 Complete and attach the Radioactive On-Site Shipping Label (Attachment 9.2). In the "Content Description" block, document that smears of inner Ziplock® type bags were < 20 dpm/100 cm² removable alpha or < 200 dpm/100 cm² removable beta/gamma, as appropriate. Enter "N/A" in the "Radiation Levels" block.

5.3.4 Complete and attach a Material Transfer - Conditional Release Only Tag (RF-47470).

5.3.5 Request an HSO/SSO review of all documentation, labeling, and packaging to ensure that it is correct and complete.

The following reference is added to Section 6.0:

6.7 HSP 18.19, 09/18/91 Issue, "Criteria and Actions for Potential Intakes".